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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/917,199	07/27/2001	Edward J. Mack SR.	56274 (45676)	8314
21874	7590	11/03/2005	EXAMINER	
EDWARDS & ANGELL, LLP			MULCAHY, PETER D	
P.O. BOX 55874			ART UNIT	PAPER NUMBER
BOSTON, MA 02205			1713	

DATE MAILED: 11/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/917,199	MACK ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Peter D. Mulcahy	1713	

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) Responsive to communication(s) filed on 15 August 2005.
- 2a) This action is **FINAL**.                            2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) Claim(s) 1,4-9,12,14-17,19 and 21-33 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1,4-9,12,14-17,19 and 21-33 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
 Paper No(s)/Mail Date \_\_\_\_\_.
- 4) Interview Summary (PTO-413)  
 Paper No(s)/Mail Date \_\_\_\_\_.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: \_\_\_\_\_.

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 4-6 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

These claims depend from claim 1 which recites a three-component composition.

These claims limit the minimum filler content to 55wt%, 60wt% and 70wt%, respectively.

The specification is not enabling for three-component compositions having minimum filler percentages within the claimed range. All examples are directed to compositions having 900g solvent, 100g polymer and 400g carbon fibers. The filler content shown in these examples is 28.57wt%. The disclosure does not specifically discuss three component compositions having the minimum amounts as claimed. It is clear from the specification that the high filler loading is only achieved relative to the polymer component and once the solvent is extracted. It should be noted that these claims are directed to a composition for forming a thermally conductive material. The formed

thermally conductive material has no solvent present. This is the subject of claim 9 and those dependent therefrom.

Applicants have amended the claims in an attempt to obviate the rejection. The rejection remains proper because the specification does not support a three component composition having the percentages of the ingredients claimed.

3. Claims 14 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 14 is dependent from a canceled claim. As such they are indefinite. These claims are further objected to under 37 CFR 1.75(c) and will not be further treated on the merits.

#### ***Claim Rejections - 35 USC § 103***

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. Claims 1, 4-6, 9, 12, 15-17 and 21-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barnes et al. US 5,001,184.

This patent shows thermoplastic matrix composite compositions having incorporated therein the claimed fibers, see the abstract and the examples. The difference between the claimed invention and that shown in the art is the express incorporation of a solvent. This patent suggests the use of the thermoplastic resin in "the form of a solution" and further references a "solution impregnation process." This is considered sufficient disclosure to render obvious the claimed solvent of claim 1 and

solution impregnation process of claims 17 and 25. One of ordinary skill would have been motivated to incorporate solvent and use the process which adds the fibers to a solution of polymer. Such being the case, the claimed invention is *prima facie* obvious from this disclosure.

Applicants argue that Barnes teaches that solvent-based methods are undesirable. This is not persuasive. The limitations of the claims are suggested. The mentioned disadvantages in the art does not render the claims patentable.

6. Claims 1, 4-6 and 21-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kunimoto et al. US 4,810,419.

This patent shows thermoplastic matrix composite compositions having incorporated therein the claimed fibers, see the abstract and the examples. The difference between the claimed invention and that shown in the art is the express incorporation of a solvent. This patent suggests the use of the claimed solvents at column 4, lines 4-10, and in the examples. This is considered sufficient disclosure to render obvious the claimed solvent of claim 1 and solution impregnation process of claim 25. One of ordinary skill would have been motivated to incorporate solvent and use the process which combines the fibers with a polymer in the claimed solvent. Such being the case, the claimed invention is *prima facie* obvious from this disclosure.

Applicants argue that the Kunimoto et al. disclosure is directed to mixing the carbon fiber slurry with the polymerization mixture before the start of the polymerization. Applicant concludes that this patent does not teach or suggest the composition as

claimed. This is not persuasive. The claimed compositional components are taught and one would find the claimed composition obvious.

7. Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kunimoto et al. US 4,810,419 or Barnes et al. US 5,001,184 as applied to claim1 and 4-6 above, and further in view of Zhuo et al US 6,162,849.

These claims require the secondary filler in combination with the solvent containing composition. The Kunimoto et al. and Barnes et al. fail to expressly incorporate the claimed secondary filler. The Zhuo et al. patent is clear as to the use of combined fillers and the incorporation of the preferred specie of secondary filler. The compositions shown in each of the patents are very similar to each other and one of ordinary skill would find it *prima facie* obvious to use a secondary filler as shown in Zhuo in the compositions of Kunimoto et al. and Barnes et al. given the advantages appreciated by one of ordinary skill in the art.

### ***Conclusion***

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter D. Mulcahy whose telephone number is 571-272-1107. The examiner can normally be reached on Mon.-Fri. 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on 571-272-1114. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Peter D. Mulcahy  
Primary Examiner  
Art Unit 1713

pdm  
10/31/05